

Notice of Allowability

Application No.

09/057,502

Examiner

LAM S. NGUYEN

Applicant(s)

SANO ET AL.

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE 11/07/2006.
2. ☒ The allowed claim(s) is/are 8,26,34,39,43 and 44.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |


MANISH S. SHAH
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with James La Barre on 11/20/2006.

The application has been amended as follows:

In the claims:

Claim 6: Cancelled

Claim 7: Cancelled

Claim 11: Cancelled

Claim 14: Cancelled

Claim 15: Cancelled

Claim 16: Cancelled

Claim 28: Cancelled

Claim 29: Cancelled

Claim 35: Cancelled

Claim 37: Cancelled

Claim 40: Cancelled

Claim 41: Cancelled

Claim 42: Cancelled

Claim 43: The claim has been rewritten as follows:

-- 43. An ink jet printer ejecting a plurality of kinds of ink droplets of different sizes from a single nozzle depending upon data to be printed, thereby forming an image on a prescribed recording medium using dots of sizes corresponding to the sizes of the ink droplets, comprising:

an ink jet head having a piezoelectric element for ejecting an image forming droplet and a smoothing droplet from a single nozzle based on data to be printed, the smoothing droplet being smaller than the image forming droplet, thereby printing dots of sizes corresponding to the sizes of the ink droplets on a prescribed recording medium;

a smoother for performing a smoothing process using the smoothing droplet to form a smoothing dot, wherein the distance between a center of the smaller size smoothing dot and a center of an image forming dot is smaller than the pitch of the image forming dot, and the position where the center of the smaller size smoothing dot is to be printed is changed within one of pixel areas arranged in a matrix form for printing dots therein, and

a controller for controlling the smoother;

wherein said controller maintains constant the speed of ejection of the ink droplet forming the smoothing dot and changes the timing of ejection of the ink droplet forming the smoothing dot, by ejecting the smoothing droplet at the same speed as that of the image forming droplet; and

wherein a drive waveform applied to the piezoelectric element in ejecting image forming droplets is different from a drive waveform applied to the piezoelectric element in ejecting smoothing droplets. --

Claim 44: The claim has been rewritten as follows:

-- 44. An ink jet printer ejecting a plurality of kinds of ink droplets of different sizes from a single nozzle depending upon data to be printed, thereby forming an image on a prescribed recording medium using dots of sizes corresponding to the sizes of the ink droplets, comprising:

an ink jet head having a piezoelectric element for ejecting an image forming droplet and a smoothing droplet from a single nozzle based on data to be printed, the smoothing droplet being smaller than the image forming droplet, thereby printing dots of sizes corresponding to the sizes of the ink droplets on a prescribed recording medium;

a smoother for performing a smoothing process using the smoothing droplet to form a smoothing dot, wherein the distance between a center of the smaller size smoothing dot and a center of an image forming dot is smaller than the pitch of the image forming dot, and the position where the center of the smaller size smoothing dot is to be printed is changed within one of pixel areas arranged in a matrix form for printing dots therein, and

a controller for controlling the smoother;

wherein said controller maintains constant the speed of ejection of the ink droplet forming the smoothing dot and changes the timing of ejection of the ink droplet forming the smoothing dot, by ejecting the smoothing droplet at the same speed as that of the image forming droplet. --

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

Regarding to claims 43-44: The claims are allowable because each contains the allowed feature included in claim 39. The feature is allowed due to the applicant's persuasive arguments in the response dated 10/06/2006.


Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S. NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LN
11/25/2006


MANISH S. SHAH
PRIMARY EXAMINER